

WHAT IS CLAIMED IS:

SWS A6

1. A device search system comprising a server unit for controlling a database in which information for identifying a device on a network and information for various attributes of the device are registered and for executing the search of the device in accordance with a search request, and a client unit for outputting the search request to the server unit, said client unit comprising:

10 first generation means for generating a first condition designating one or more attributes in order to search a desired device on the network,

15 second generation means for extracting a certain attribute from the first condition to generate a second condition,

search means for requesting the server unit to search in accordance with the second condition to obtain the information for a device matching the second condition as a result of the above search,

20 first control means for sorting and outputting only the information for the device matching the first condition as first result information in accordance with the obtained search result, and

25 second control means for outputting the information for the device matching the second condition as second result information in accordance with the obtained search result and the information

showing presence or absence of each attribute
designated by the first condition for each device.

2. The device search system according to claim 1,

5 wherein

device attributes controlled by the database
include an indispensable attribute to be registered
whenever a device is registered in the database and
attributes other than the indispensable attribute, and
10 the second generation means extracts only the
indispensable attribute from attributes designated by
the first condition to generate the second condition.

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3. The device search system according to claim 2,
15 wherein the client unit further comprises;

third control means for selectively outputting the
first result information or the second result
information in accordance with a predetermined
condition.

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4. The device search system according to claim 3,
wherein

the third control means outputs the first result
information when a device to be output as the first
25 result information is present and outputs the second
result information when a device to be output as the
first result information is not present.

5. The device search system according to claim 2,
wherein

the client unit further comprises storage means
for storing symbol information corresponding to an
5 attribute which can be designated by the first
condition, and

when the second result information is output and
when the information showing presence or absence of
each attribute designated by the first condition
10 output, presence or absence of each attribute is shown
in accordance with a display mode of the symbol
information corresponding to each attribute.

6. A system including a client unit for
15 requesting search of a device on a network and a server
unit for executing search of the device in accordance
with a search request from the client unit, wherein the
server unit comprises;

control means for controlling a database in which
20 the information for identifying a device on the network
and the information for various attributes of the
device are registered,

reception means for receiving a first condition
designating one or more attributes in order to search a
25 desired device on the network from the client unit,

generation means for extracting a certain
attribute from the first condition and generating a

second condition,

first search means for searching a device matching
the first condition from the database and outputting
first result information, and

5 second search means for searching a device

matching the second condition from the database and
outputting second result information.

7. The system according to claim 6, wherein

10 attributes of a device controlled by the database
include an indispensable attribute registered whenever
a device is registered in the database and attributes
other than the indispensable attribute, and

15 the generation means extracts only the
indispensable attribute designated by the first
condition and generates the second condition.

8. The system according to claim 7, wherein

20 the server unit further comprises;
control means for selecting the first result
information or the second result information in
accordance with a predetermined condition and returning
the information to the client unit.

25 9. The system according to claim 8, wherein

the control means returns the first result
information to the client unit when a device to be

output as the first result information is present and returns the second result information to the client unit when the device to be output as the first result information is not present.

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Subj A 10. A device search system for requesting a server unit for controlling a database in which information for identifying a device on a network and information for various attributes of the device are registered to search the device and processing a search result, comprising:

first generation means for generating a first condition designating one or more attributes in order to search a desired device on the network;

15 second generation means for extracting a certain attribute from the first condition and generating a second condition;

20 search means for outputting a search request to the server unit in accordance with the second condition and obtaining information for a device matching the second condition as a search result;

25 first control means for sorting and outputting information for only a device matching the first condition as first result information in accordance with the obtained search result; and

second control means for outputting information for a device matching the second condition and

information showing presence or absence of each attribute designated by the first condition for each device.

5 11. The device search system according to claim
10, wherein

attributes of a device controlled by the database include an indispensable attribute registered whenever a device is registered in the database and attributes
10 other than the indispensable attribute, and

the second generation means extracts only the indispensable attribute from attributes designated by the first condition and generates the second condition.

15 12. The device search system according to claim
11, further comprising:

third control means for selectively outputting the first result information or the second result information in accordance with a predetermined
20 condition.

13. The device search system according to claim
12, wherein

the third control means outputs the first result
25 information when a device to be output as the first result information is present and outputs the second result information when the device to be output as the

first result information is not present.

14. The device search system according to claim
11, further comprising:

5 storage means for storing symbol information
corresponding to an attribute which can be designated
by the first condition, wherein

when the second result information is output and
when information showing presence or absence of each
10 attribute designated by the first condition is output,
presence or absence of each attribute is shown in
accordance with a display mode of the symbol
information corresponding to each attribute.

15 15. A device search system for executing device
search in accordance with a search request from a
client unit for requesting search of a device on a
network, comprising:

control means for controlling a database in which
20 information for identifying the device on the network
and information for various attributes of the device
are registered;

reception means for receiving a first condition
designating one or more attributes in order to search a
25 desired device on the network from the client unit;

generation means for extracting a certain
attribute from the first condition and generating a

second condition;

first search means for searching a device matching the first condition out of the database and outputting first result information; and

5 second search means for searching a device matching the second condition from the database and outputting second result information.

16. The device search system according to claim
10 15, wherein

attributes of a device controlled by the database include an indispensable attribute registered whenever a device is registered in the database and attributes other than the indispensable attribute, and

15 the generation means extracts only the indispensable attribute from attributes designated by the first condition and generating the second condition.

20 17. The device search system according to claim 16, further comprising:

control means for selecting the first result information or the second result information in accordance with a predetermined condition.

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18. The device search system according to claim 17, wherein

the control means returns the first result information to the client unit when a device to be output as the first result information is present and returns the second result information to the client unit when a device to be output as the first result information is not present.

19. A device search method for requesting a server unit for controlling a database in which information for identifying a device on a network and information for various attributes of the device are registered to search a device and processing a result of the search, comprising the steps of:

generating a first condition designating one or more attributes in order to search a desired device on the network;

extracting a certain attribute from the first condition and generating a second condition;

requesting the server unit to perform search in accordance with the second condition and obtaining information for a device matching the second condition as a result of the search;

sorting and outputting only information for a device matching the first condition as first result information in accordance with the obtained search result; and

outputting the information for the device matching

the second condition and information showing presence or absence of each attribute designated by the first condition for each device.

5 20. The device search method according to claim
19, wherein

10 attributes of a device controlled by the database include an indispensable attribute registered whenever a device is registered in the database and attributes other than the indispensable attribute, and

only the indispensable attribute is extracted from attributes designated by the first condition when the second condition is generated.

15 21. The device search method according to claim
20, further comprising the step of:

selective outputting the first result information or the second result information in accordance with a predetermined condition.

20 22. The device search method according to claim
21, wherein

25 the first result information is output when a device to be output as the first result information is present and the second result information is output when the device to be output as the first result information is not present.

23. The device search method according to claim
20, further comprising the step of:

controlling symbol information corresponding to an
attribute which can be designated by the second result
5 information, wherein

when the second result information is output and
when information showing presence or absence of each
attribute designated by the first condition is output,
presence or absence of each attribute is shown in
10 accordance with a display mode of symbol information
corresponding to each attribute.

24. A device search method for searching a device
in accordance with a search request from a client unit
15 for requesting search of a device on a network,
comprising the steps of:

controlling a database in which information for
identifying a device on the network and information for
various attributes of the device are registered;

20 receiving a first condition designating one or
more attributes in order to search a desired device on
the network from the client unit;

extracting a certain attribute from the first
condition and generating a second condition;

25 searching a device matching the first condition
from the database and outputting first result
information; and

searching a device matching the second condition
and outputting second result information.

25. The device search method according to claim
5 24, wherein

attributes of a device controlled by the database
include an indispensable attribute registered whenever
a device is registered in the database and attributes
other than the indispensable attribute, and

10 only the indispensable attribute is extracted from
attributes designated by the first condition when the
second condition is generated.

26. The device search method according to claim
15 25, further comprising the step of:

the first result information or the second result
information is selected in accordance with a
predetermined condition and returned to the client
unit.

20 27. The device search method according to claim
26, wherein

the first result information is returned to the
client unit when a device to be output as the first
25 result information is present, and

the second result information is returned to the
client unit when the device to be output as the first

result information is not present.

28. A storage medium storing a computer program
to be executed by a computer of a device search system
5 for requesting a server unit for controlling a database
in which information for identifying a device on a
network and information for various attributes of the
device are registered to search a device and processing
a result of the search, wherein the program comprises
10 the steps of;

generating a first condition designating one or
more attributes in order to search a desired device on
the network;

15 extracting a certain attribute from the first
condition and generating a second condition;

requesting server unit to perform search in
accordance with the second condition and obtaining
information for a device matching the second condition
as a result of the search;

20 sorting and outputting only information for a
device matching the first condition as first result
information in accordance with the obtained search
result; and

25 outputting information for the device matching the
second condition as second result information and
information showing presence or absence of each
attribute designated by the first condition for each

device in accordance with the obtained search result.

29. The storage medium according to claim 28,
wherein

5 attributes of a device controlled by the database
include an indispensable attribute registered whenever
a device is registered in the database and attributes
other than the indispensable attribute, and

only the indispensable attribute is extracted from
10 attributes designated by the first condition when the
second condition is generated.

Sub A 30. The storage medium according to claim 29,
wherein the computer program further comprises the step
15 of;

selectively outputting the first result
information or the second result information in
accordance with a predetermined condition.

20 31. The storage medium according to claim 30,
wherein the first result information is output when a
device to be output as the first result information is
present, and

the second result information is output when the
25 device to be output as the first result information is
not present.

32. The storage medium according to claim 29,
wherein the computer program further comprises;
controlling symbol information corresponding to an
attribute which can be designated by the first
5 condition, and
to output the second result information and
information showing presence or absence of each
attribute designated by the first condition, presence
or absence of each attribute is shown in accordance
10 with a display mode of symbol information corresponding
to each attribute.

33. A storage medium storing a computer program
to be executed by a computer of a device search system
15 for executing search of a device in accordance with a
search request from a client unit for requesting search
of a device on a network, wherein the computer program
comprises the steps of;
controlling a database in which information for
20 identifying a device on the network and information for
various attributes of the device,
receiving a first condition designating one or
more attributes in order to search a desired device on
the network from the client unit,
25 extracting a certain attribute from the first
condition and generating a second condition,
searching a device matching the first condition

from the database and generating first result
information, and

searching a device matching the second condition
from the database and generating second result
information.

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34. The storage medium according to claim 33,

wherein

10 attributes of a device controlled by the database
include an indispensable attribute registered whenever
a device is registered in the database and attributes
other than the indispensable attribute, and

15 only the indispensable attribute is extracted from
attributes designed by the first condition when the
second condition is generated.

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35. The storage medium according to claim 34,

wherein the computer program further comprises the step
of;

20 selecting the first result information or the
second result information in accordance with a
predetermined condition and returning the information
to the client unit.

25 36. The storage medium according to claim 35,

wherein

the first result information is returned to the

client unit when a device to be output as the first result information is present, and

the second result information is returned to the client unit when the device to be output as the first result information is not present.

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